## Extended Big History Offerings

- Big History Public Course
- Big History Project on Facebook and Twitter
- Big History on Khan Academy
- Big History on H2
- Crash Course Big History

## Teaching Big History

- Teacher as Lead Learner
- Big History Reading Guide
- Approach to Reading
- How to Meet These Goals

## Big History Writing Guide

- Part I: Prewriting
- Part II: Outlining and Drafting
- Part III: Revising and Finalizing

## Assessment in Big History

- Rubrics
- Closings
- Writing Assessments
- Lesson Quizzes

## Driving Question Notebook Guide

- Who sees the DQ Book?

## Little Big History

## Project Based Learning

## Openings Guide
<table>
<thead>
<tr>
<th>Vocab Activities Guide</th>
<th>31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menu of Activities</td>
<td>31</td>
</tr>
<tr>
<td>Memorization Activities</td>
<td>31</td>
</tr>
<tr>
<td>Comprehension Activities</td>
<td>33</td>
</tr>
<tr>
<td>Application Activities</td>
<td>34</td>
</tr>
<tr>
<td>Interpreting Infographics Guide</td>
<td>36</td>
</tr>
<tr>
<td>Homework Guide</td>
<td>37</td>
</tr>
<tr>
<td>Video</td>
<td>37</td>
</tr>
<tr>
<td>Readings</td>
<td>37</td>
</tr>
<tr>
<td>Sample Lesson - Origin Stories</td>
<td>39</td>
</tr>
</tbody>
</table>
Welcome to the Big History Project!

Big History weaves evidence and insights from many disciplines across 13.8 billion years into a single, cohesive, science-based origin story. The concept arose from a desire to go beyond specialized and self-contained fields of study to grasp history as a whole. Big History explores how we are connected to everything around us and where we may be heading. It provides a foundation for thinking about the future and the changes that are reshaping our world.

Big History challenges students to think critically and broadly and tries to ignite a passion for inquiry. Access to a wide variety of learning resources encourages exploration. Students practice critical reading and writing skills through investigations, projects, and activities, and gain a strong interdisciplinary foundation, which provides a useful context for understanding world events in the past and present.

Here’s what teachers have said about teaching Big History for the first time—we look forward to hearing about your experience!

"What is exciting for students and teachers alike in this class is that learning is not compartmentalized but instead we regularly use the methodologies and content of many disciplines to explore issues that confront our world today."

"Students are just blown away. It’s so new. It’s not in the current curriculum so that’s exciting to them because it’s new."

“I just finished parent-teacher conferences and, without fail, every Big History student’s parents raved about the course. They all said how cool they think it is, how important they think it is, and, most importantly, how they hear about it from their student every night in the car or around the dinner table."

Big History requires students to examine big questions:

- How has the Universe and life within it grown more complex over the past 13.8 billion years?
- How do we know what we know about the past?
- How can we judge claims about the past?
- Why does what we “know” change over time?
- How does what happened during the early days of the Universe, the Solar System, and the Earth shape what we are experiencing today?

Students get to participate in the important and exciting work of exploring, developing, and testing big answers.
Join the Community

This course is driven by a deeply engaged group of educators. Much of the instructional content reflected in this course is drawn from best practices of veteran teachers of Big History. By contributing feedback and suggesting new ideas, current teachers play an immensely important role in the continual improvement of the Big History course. In addition, teachers within the program rely on one another over the course of the year for support and camaraderie. It is a challenging and fun course to teach, it requires a lot of effort, and it taps into a diverse set of knowledge. Working together, teachers can share best practices and problem-solve along the way. You will have the opportunity to work with other Big History teachers by participating in community discussions (online and offline), and by attending our Big History Project summits and “cluster meetings.” We have a strong online community of teachers who use the website for feedback and support. Become part of the community and help to shape the course by sharing feedback, lessons, and ideas. The more active our community of Big Historians, the more successful each individual teacher and student will be with the program.
Who Should Teach Big History?

The Big History Project is an interdisciplinary study of change over time from the Big Bang to the future, but at its core, it is a history course. To that end, Big History is designed as a ninth- to tenth-grade history course. Students will still achieve the same outcomes of a high school world history course. Many schools teach Big History in place of world history. Others offer Big History in place of world geography or as an elective course in the history department. Some middle schools have offered Big History as an honors course, spreading out the course over two years. Big History works particularly well as a capstone course for high school seniors, as there are an infinite number of opportunities for students to go very deep on complex topics across a range of topics. Although Big History is designed as a full-year course, some schools will teach it in a single semester. When they do, they often focus on the content and do not include all of the Investigations or the project-based learning (PBL) activities.

The Big History Project (BHP) is a technology-based course, though it is not a self-paced course. BHP assumes a teacher is available to discuss content with students, and to evaluate student work. A significant portion of the course content is contained in a series of videos, including talks from David Christian and a variety of noted scholars. While the various articles and graphic content may be printed and shared in hard copy, the course relies heavily on this video content. Without appropriate technology, it would be very difficult to teach BHP. At the same time, the Big History Project does not require every student to have a computer in the classroom. Many schools teach Big History by showing the videos in class and distributing hard copy of readings for use at home.
Course Themes
The Big History course focuses on three essential skills and three key concepts that we want students to master as part of engaging with the material. The essential skills are thinking across scale, integrating multiple disciplines, and making and testing claims. The core concepts are thresholds, collective learning, and origin stories.

Essential Skills
Thinking across scales
- Big History encourages students to think across scales, from the massive expanse of the Universe to the smallest of atoms.
- Students need to think across both temporal as well as physical scales, looking at problems and trends through the lenses of personal, family, community, national, human, and geologic. They must also consider how scale is connected to perspective.

Integrating multiple disciplines
- Big History encourages the use of interdisciplinary thinking and methodologies. Students should look to integrate the insights of multiple disciplines when analyzing and drawing conclusions about historical information, including social, physical, and natural sciences.
- Students should develop an awareness of the focus of a variety of scholarly disciplines and understand the types of questions they ask, the types of conclusions that they draw, and the types of evidence they use to support their findings.

Making and testing claims
- Big History encourages students to develop a thoughtful, consistent, and rigorous approach to engaging with new ideas and information.
- Students should apply these techniques in their writing and other academic discourse.

Core Concepts
Thresholds
- Big History looks at the Universe as a series of moments called Thresholds. These moments are characterized by a set of ingredients and a set of ‘Goldilocks Conditions’ that result in new forms of complexity. Big History tells the story of the Universe by using these moments to describe Universal change.
- The use of thresholds is unique to Big History, but it provides a helpful means of analysis that can be applied to more traditional historical contexts as well as other disciplines.

Collective learning
- Collective learning is the human ability to share, preserve, and build knowledge over time.
- For David Christian, this is the defining characteristic that separates humans from other species.

Origin stories
- There are numerous explanations of the origins of our planet as well as the Universe as a whole. Since the time of the earliest humans, we have struggled to make sense of our world. Big History represents one point of view, and is considered a modern, scientific origin story.
- The Big History origin story is incomplete and will continue to evolve as science and scholarly inquiry continue to advance.
Course Learning Outcomes

1. Explain how thresholds of increasing complexity, differing scales of time and space, claim testing, and collective learning help us understand historical, current, and future events as part of a larger narrative.

2. Use perspectives from multiple disciplines to create, defend, and evaluate the history of the Universe and Universal change.

3. Deepen an understanding of key historical and scientific concepts and facts, the ability to use these in constructing explanations.

4. Engage in meaningful scientific inquiry and historical investigations by being able to hypothesize, form researchable questions, conduct research, revise one’s thinking, and present findings that are well-supported by scientific and historical evidence.

5. Critically evaluate, analyze, and synthesize primary and secondary historical, scientific, and technical texts to form well crafted and carefully supported written and oral arguments.

6. Communicate arguments to a variety of audiences to support claims through analysis of substantive texts and topics using valid reasoning and relevant and sufficient evidence through individual or shared writing, speaking, and other formats.

7. Locate and understand how our own place, our community’s place, and humanity as a whole fit into and impact the Big History narrative, using the concept of “thresholds” to frame the past, present, and future.

8. Engage in historical analysis using the theories and practices from multiple disciplines, toward an integrated, interdisciplinary understanding of the history of the Universe.
Course Structure

Big History is divided into two sections and a total of 10 units that collectively span 13.8 billion years.

Part 1: Formations and Early Life

Unit 1: What Is Big History?

*Driving Question: Why do we look at things from far away and close up?*

1. Define thresholds of increasing complexity, origin stories, and scale.
2. Understand that Big History is a modern, science-based origin story that draws on many different types of knowledge.
3. Understand how you fit into the Big History narrative, using the concept of “thresholds” to frame your past, present, and future, and the history of the Universe.
4. Understand what disciplines are and consider how the viewpoints of many different scholars can be integrated for a better understanding of a topic.

Unit 2: The Big Bang

*Driving Question: How and why do individuals change their minds?*

1. Explain the basics of the Big Bang theory and the primary evidence that supports this theory.
2. Using evidence from texts, explain why views of the Universe have changed over time and the roles that scientists have played in shaping our understanding of the origin of the Universe.
3. Understand how to use claim testing to evaluate a claim or resource.

Unit 3: Stars and Elements

*Driving Question: How can looking at the same information from different perspectives pave the way for progress?*

1. Describe how stars form.
2. Explain what happens in the life of a star and explain what happens when a star dies.
3. Explain how the death of stars results in the creation of heavier elements.
4. Explain why the formation of stars and the emergence of elements are so important in our world.
5. Understand what scholars from multiple disciplines know about a topic and the questions they can ask to gain an understanding of the topic from an integrated perspective.
Unit 4: Our Solar System and Earth

Driving Question: How and why do theories become generally accepted?

1. Explain why planets are more complex than stars.
2. Use evidence to explain how the Earth and its atmosphere developed and changed over time.
3. Explain the basic mechanisms and key pieces of evidence for plate tectonics, and how plate tectonics impacts life on Earth.
4. Explain why geology is important to understanding the history of the Earth.
5. Define geology, the types of questions geologists ask, and the tools they use to answer these questions.

Unit 5: Life

Driving Question: How are we still evolving?

1. Describe the conditions that made it possible for life to emerge on Earth.
2. Explain the differences between life and non-life.
3. Describe the major events in the development of life on Earth and explain what is meant by the term biosphere.
4. Use evidence to explain adaptation and evolution, including Darwin’s theory of natural selection and DNA.

Part 2: Humans

Unit 6: Early Humans

Driving Question: What makes humans different from other species?

1. Describe human evolution, using evidence and connection to other species of mammals.
2. Explain whether or not symbolic language makes humans different.
3. Describe how early humans lived.
4. Explain collective learning.
Unit 7: Agriculture and Civilization

Driving Question: Was farming an improvement over foraging?

1. Define agriculture and describe where it emerged.
2. Identify the features of agrarian civilizations.
3. Understand the similarities and differences between the lifestyles of hunter-gatherers and farmers.
4. Describe how early civilizations formed and their key features.

Unit 8: Expansion and Interconnection

Driving Question: What are the positive and negative impacts of interconnection?

1. Analyze what propelled the expansion and interconnection of agrarian civilizations. (CO5)
2. Investigate the implications of interconnected societies and regions by looking at how commerce has spread.
3. Explain how new networks of exchange improved collective learning and innovation. (CO1, CO3)

Unit 9: Acceleration

Driving Question: To what extent has the Modern Revolution been a positive or a negative force?

1. Describe accelerating global change and the factors that describe it.
2. Understand the key features that define the Anthropocene.
3. Describe how economies have developed and changed since the Industrial Revolution.

Unit 10: The Future

Driving Question: What’s the next threshold?

1. Explain the Big History story and its defining features and patterns.
2. Identify important human and environmental issues that affect the future of our species and the biosphere.
3. Propose a vision of the future based on new understandings of the past.
Course Content
The Big History Project course includes a wide range of materials. All course contents come with teaching notes, are available online, and can be downloaded for offline use. These resources include the following:

- **Videos**: A series of talks by David Christian, Crash Course, and other noted scholars presenting challenging topic to students, including visualizations of more complex ideas.
- **Texts**: A series of articles and essays by noted scholars and BHP staff, including first source material. All texts in the course have been leveled, and each article has three or four versions so students of all reading levels can engage with the course material.
- **Activities**: Lessons include both standard activity types (vocabulary activities, for example) as well as unique, custom activities that are designed to maximize student engagement and learning.
- **Infographics**: Data-rich illustrations created to illuminate complex topics such as the life of stars and the chemical make-up of the oceans.
- **Image galleries**: Each lesson includes a set of historical and informational illustrations to highlight key ideas and concepts.
Lesson resources

BHP is designed to provide a flexible structure for teachers to deliver the content to their students. The course is divided into units that roughly align with the eight thresholds. Each unit is divided into a set of suggested lessons. Teachers may use this structure, including a set of lessons written by experienced BHP classroom teachers, or easily incorporate the material into their own lessons plans for the course. Each unit includes the following lesson resources:

Activities

Activities are woven into every unit and are an integral part of every lesson. A variety of activity types and worksheets offer different ways for students to learn, experience, practice, and test concepts covered in the course. Certain activity types are included in multiple units, offering students and teachers some consistent practices for exploring Big History themes within and outside their classrooms. In addition, our “Closing” activities are used for the purpose of formative assessment throughout the course.

Investigations

Investigations are activities that ask students to further explore some of the big issues tackled in each unit. All investigations ask students to answer the unit driving question by analyzing, synthesizing, and evaluating evidence to construct their own answers. They encourage students to use the provided documents, artifacts, and objects to make arguments and explanations about change over time, while developing student literacy and critical thinking skills. Each investigation asks students to:

1. Frame a historical or other social science problem.
2. Read, analyze, corroborate, and synthesize sources from a carefully selected library of texts and experiences.
3. Develop an explanation or build an argument to resolve their research question.
4. Evaluate their own and others’ claims.

Project-based Learning Activities

Project-based learning (PBL) is a method of instruction that has students take part in an extended inquiry about a complex question, problem, or challenge. The Big History Project includes three PBL activities:

- Unit 5: Invent a Species
- Unit 7: How Many People Could Earth Support Now and 100 Years from Now?
- Unit 10: What Is the Next Threshold?

Each of these activities is written to cover two weeks of instructional time. In each, students work in groups to research their questions, compose a written response, and share their results with their class and the community. Each of these projects is written to follow the PBL methodology of the Buck Institute for Education. For more information on the PBL method, please see the Buck Institute for Education (BIE) website at http://www.bie.org/.

Guiding Documents

In every lesson, we provide a variety of methodologies for you to use that address reading, writing, and approaches to teaching and learning. These guiding documents are offered as suggested approaches, but all lessons can be adapted to your preferred format. You’ll find the guides in the Teaching Big History section of this document.
Additional Resources
Web links to relevant public content are available in every unit. A unit-specific glossary and easy access to the complete course glossary are available from the main page of each unit. Students can also search for glossary terms in the Search field on every page of the site.

GLOSSARY

A

absolute dating
Precise dates on a universal time scale.

absorption lines
Visible lines on an observed color spectrum that reveal the chemical composition of the light source.

accretion
The process by which planets form as material orbiting some stars gathers together through collisions and gravitational or electrostatic attraction, eventually forming larger and larger bodies.

adaptation
A fundamental ability of living organisms enabling them to change from generation to generation, becoming better suited to their environment.

Afro-Eurasian world zone
The part of the world that includes the land masses of Africa, Europe, and Asia.

agrarian civilization
A civilization based on farming.

Agrarian era
An era of human history when most people were focused on agriculture.
Extended Big History Offerings

In addition to the course offered at the Big History Project website, there are a number of other offerings that expose students and the larger community to Big History. These resources, used in tandem with the school course, can provide a variety of ways for teachers to integrate parents into the content of Big History.

**Big History Public Course**

[https://www.bighistoryproject.com/pages/syllabus](https://www.bighistoryproject.com/pages/syllabus)

The public version of the Big History course is designed to be shorter and targeted at individuals who simply want to learn more about the subject. Following a magazine style layout, the site presents about 8 to 12 hours of content (in contrast to the school version's 80 to 150 hours). At the end of each threshold, participants can take a quiz and earn a badge. Those that earn all nine badges become Certified Big Historians and earn a real badge to share. Some schools have used this site to engage parents in the substance of the material and even had contests to see which class got the most certified parents.

**Big History Project on Facebook and Twitter**

[https://www.facebook.com/bighistoryproject](https://www.facebook.com/bighistoryproject)

[https://twitter.com/BigHistoryPro](https://twitter.com/BigHistoryPro)

With a large and ever-growing community of Big Historians, facebook and twitter host active and lively conversations about all things Big History. Bringing together teachers, scholars, and interested individuals, these sites are terrific ways to keep up with news from the field and make connections with others.

**Big History on Khan Academy**

[https://www.khanacademy.org/partner-content/big-history-project](https://www.khanacademy.org/partner-content/big-history-project)

The Big History Project is one of the first courses on Khan Academy authored by a partner. The site offers a slightly condensed version of the course. Aimed at individual learners, it includes many of the classroom materials as well. This allows classroom teachers to use the growing set of Khan Academy analytics tools and mobile applications, while still delivering the same great Big History course.

**Big History on H2**

[http://www.history.com/shows/big-history](http://www.history.com/shows/big-history)

This television series from the History Channel was produced in partnership with the Big History Project and stars Bryan Cranston. Each episode tells the story of an object or phenomena through the lens of Big History, looking at the connections between the thresholds and across multiple disciplines.

**Crash Course Big History**

John and Hank Green take on Big History with their unique sense of humor and serious insights. The web series, developed in cooperation with the Big History Project, provides a complementary point of view on the course content.
Teaching Big History

In this section of the Teaching Guide, you will learn about our recommended instructional approaches. Big History is not an easy course, and there are concepts and readings throughout that are hard for students and teachers alike. Students need extensive literacy skills to successfully navigate Big History, and we don’t expect all Big History teachers to be able to expertly teach reading and writing in addition to the disciplinary content.

In this section, you will find the following guides:

- Reading
- Discussion
- Writing
- Assessment
- Driving Question Notebook
- Little Big History (LBH)
- Project-Based Learning (PBL)
- Openings
- Vocab Activities
- Interpreting Infographics
- Homework

Before delving into the individual guides, it is important that we share the Big History instructional philosophy regarding the teacher’s role in the classroom. Big History is interdisciplinary and uses a wide range of knowledge and methods, which can feel daunting to teachers. Our framing should help you understanding how you can successfully teach Big History knowing what you already know.

Teacher as Lead Learner

Big History brings together the insights of a wide range of scholarly disciplines over the largest possible timeline to help inform historical analysis and understanding of the relatively recent past. Indeed, Big History is really, really big. One of the key concerns of teachers new to Big History is that in order to teach 13.8 billion years of history that incorporates a variety of scientific topics into the discussion, they must have a comprehensive grasp of all of the material mentioned. Veteran teachers of Big History quickly realize that it is not possible to have complete command over all of this content. Instead, their role in the classroom is to model historical analysis—a method of systematic and deliberate exploration that seeks to make sense of the past. The shift here moves the teacher from the role of being the source knowledge into the role of lead learner.

We agree that in order to effectively teach chemistry, you need to have a firm grasp of atomic structure, chemical reactions, and the properties of specific elements and compounds. However, it’s important to note that in Big History we don’t always ask students to go very deep on the underlying mechanics of scientific phenomena. Instead, we ask them to fold the consequences of scientific understanding into historical analysis, and to think through the implications of scientific insights. For example, we do ask students and teachers to understand that the distribution of chemical elements in the earth has resulted in critical components of social and political behaviors on the part of human beings. Mining and trading of gold is an example. Why is gold found where it’s found? Why is it used as currency? Why can’t we produce more gold? These are all topics covered in the course.
Big History is, after all, a history course. Historical analysis has always sought to draw upon the insights of a variety of disciplines. Geography, geology, anthropology, and archaeology are all examples of fields that draw upon the insights of multiple disciplines, both social and scientific in nature. What makes Big History unique is that it draws upon an even broader array of disciplines, such as chemistry, physics, and astronomy to inform historical analysis.

A benefit to this widely cast net is that there are intellectual practices that span all of these disciplines. As we are seeing in a variety of new standards such as CCSS, NGSS, and C3, Big History encourages students to develop a set of intellectual practices that help them to understand a complex history of ideas that spans 13.8 billion years and a diverse lifelong academic disciplines. The emphasis is placed on how one engages with new ideas and information rather than on a single set of concepts and facts. Students have to learn how to hypothesize, ask questions, seek out resources, analyze documents and content, make claims, support those claims, and write clear and cogent arguments. You already know how to do all of these things, and you know how to do them well.

You are skilled at engaging in all of the intellectual practices needed to help your students be successful in Big History. As the lead learner, you are not expected to be the holder of all knowledge—instead, you are the leader in seeking knowledge. You may not know how stars formed, but you know how to figure out how they formed. You know how to model finding this knowledge. And sometimes that might even mean finding an expert in a particular field. What’s important, especially as part of developing your students’ twenty-first century skills, is that students know how to ask questions, find information, make sense of and apply that information, and so on.

In Big History, you have a rare and amazing opportunity to co-construct knowledge with your students when you delve into topics with which you are less familiar. By being the lead learner in the classroom, you can show students how to be a learner. Not only will they learn extensive amounts about the history of the world, they will also learn so much about themselves and gain invaluable lifelong skills. In short, Big History asks teachers and students alike to model the behavior of historians. The goal is to understand the types of questions other disciplines might ask and review the insights they might bring to bear on historical analysis. Since it is impossible for any one scholar to understand the insights of all others, we need to help students think about how to engage with other fields.

**Big History Reading Guide**

The Big History course provides you and your students with a lot of difficult readings, so it’s important to be mindful of how you and your students approach the texts. We provide a variety of resources and a particular instructional approach to help ensure that your students understand course material. Note that this is about helping your students read in general, it’s not a guide on how to teach reading history.

**Reading Resources for Teachers**

So that you can provide appropriate readings for each of your students, we provide you with the following resources:

1. **Lexile Measures**—The Lexile level of each text is provided so that you can differentiate accordingly for your students.

2. **Multiple versions of readings**—Newsela, a group that provides nonfiction news articles at varying reading levels, has edited our readings and provided three to four versions of each, ensuring that your students can access some version of each reading no matter their reading level.
3. **Vocabulary**— Vocabulary activities are suggested throughout the course to help your students memorize key words. Understanding these words should help remove a barrier to understanding the course readings.

4. **Teaching tips**— As you move through the lessons, teaching tips are provided to help inform how you might approach readings with your students.

**Approach to Reading**

To meaningfully participate in this course, it’s vital that students are able to fully comprehend the meaning and goal of each text. The usefulness of reading for engaging in discussion, completing investigations, and mastering the essential skills and key concepts in the course cannot be emphasized enough. To that end, the Big History reading methods encourage you to use a careful and deliberate process when approaching readings with your students. These methods have been borrowed from long established methodologies and best practices for teaching reading. The foundation of our approach to reading is that you and your students engage in a three-part reading process. This process includes reading for gist, reading for facts, and reading for comprehension and extension.

While three close reads may sound like a lot, in the end it will save you and your students time. It will help ensure that students can decode and fully comprehend each article, allowing all students to access the information that will help them be successful in the course. By engaging in this process, students will, in general, complete readings more quickly and with more understanding than with one read, given that when a difficult reading is approached without much prior knowledge it can be frustrating, leading to disengagement and a loss of any learning at all.

In the course lessons, we’ve mapped each of the three close reads to a section of every reading activity. The Preview section of each reading activity corresponds to the capturing gist read. The Key Ideas section corresponds to the factual read. The third read, conceptual thinking, maps to the Conceptual Thinking section and addresses metacognitive and application questions.

**Reading 1: Preview — Capturing Gist**

The first reading isn’t really a full reading—rather, it’s a skim and helps capture the general idea of what a reading is about. When reading for gist, we encourage you to follow this format:

1. **Title**—Have students read the title of the text. What do they think it’s going to be about?
2. **Headings**—Read all headings in a text (if any are present). Does this change what they think it’s about? Have they learned more?
3. **Resource quality**— Is it opinion? A primary document? A research report? Examine the author or resource. Is it legitimate? Have students use their knowledge of claim testing to decide upon the quality and veracity of the source and how that impacts the types of information they may encounter in this reading.
4. **Summarize**—Ask students to briefly summarize what this article is about. A fun way to do this is to ask students to “tweet this.” In 140 characters or less, they provide what they believe to be the gist of the article. This should point to the main theme, premise, or assertion. This is also an assessment of how they are comprehending the importance of titles, authors, and other high level elements of a text.
Reading 2: Key Ideas — Factual

The informational reading is the type of reading that students are most used to doing. This type of reading helps students ask questions such as: What was this article about? What are the main themes or claims in the reading? What new information do I know after reading this?

1. **Vocabulary**—As students begin to read, it’s important to first introduce them to any difficult vocabulary they may encounter. It’s important for students not to get tripped up on particular words. If there is a text with a lot of difficult vocabulary, use one of the Big History vocab activities to help students get ready to read. Give them a list of words and definitions that they can have with them while they read, or ask students to try to figure out words based on the context of the sentence. If they can’t understand a sentence without knowing the meaning of that word, encourage them to look it up before moving on.

2. **Annotation**—At the end of each paragraph, have students stop and think about the content of that paragraph. In a notebook or the margins of the text, they should write a few words or quick statements about that paragraph. If they don’t understand something, they can put a question mark to ask about later. This is not a space for thoughts or opinions, just simple facts.

3. **Retell and rank**—Either through writing or discussion, at the end of a reading have students share the key points from the article. Then, have them rank what they learned from most important to least important. This not only helps them remember the contents of the article, but also helps you understand if they are focusing on and understanding the key informational points. In addition, it gives the students access to what others think is the most important information, helping them to view content from a variety of perspectives.

Reading 3: Conceptual Thinking

This third reading goes beyond understanding the contents of the article, to understanding the implications of those contents. Why does that information matter? What does it have to do with the Big History narrative? This is arguably the most important part of the reading strategy, but it cannot be approached until students have had the opportunity to understand the basics of each article through the first and second readings.

After every article and video in the lessons, you will find a Conceptual Thinking section. The questions in this section are meant to enable the exploration of big ideas; highlight opportunities to compare, contrast, and explore contradictions; lead to deeper disciplinary and interdisciplinary understanding; promote transfer to familiar or less familiar situations, issues, ideas, and contexts; and encourage analysis and application. It’s important that you ask these types of questions throughout the course—and not just use the ones that are provided—to continue to deepen student understanding.

Big History Discussion Guide

One goal of Big History is to promote rich discourse in the classroom. We want students not only to think and write like historians, but to talk like historians as well. Establishing discussion norms around accountable talk can often be difficult, but if you start with structured discussions at the beginning of the school year, your students will learn to self-monitor and engage in thoughtful and meaningful discourse and argumentation without prompting from you.

**Goals for Discussion**

1. Support the development of academic language
   - Glossary terms should be used in all class discussions.
   - Key words should be used daily by students.
   - You should highlight particular words that students need to know or be familiar with and use in
discussion. This goes beyond learning vocabulary and is instead about the deliberate use of key terms in discussion, such as using claim testers language in everyday discussion.

2. Press for justification and reasoning (that is, use claim testing in discussion)
   - Identify opportunities to press for justification
   - Use thoughtful questioning strategies so students can state how and why they did things.
   - Show how pressing for justification and reasoning is directly related to the claim testing process in the course.
   - Students learn discussion strategies to press each other for justification.
   - Anticipate where students might struggle, suggest alternative tasks/activities.

3. Promote rich and engaging discourse
   - Design tasks that support student opportunities to listen to one another.
   - Establish question asking norms.
   - Create a classroom climate in which students feel comfortable sharing their thinking.
   - Use debates, turn and talk, think pair share, and group roles to facilitate this.

**How to Meet These Goals**

We don’t advise doing all of these things at once. Rather, we suggest you practice each of the main goals and establish norms around those goals and then add the next goal to your list. We will refer you to this discussion guide throughout the course. It is up to you and your students to decide when you will move on to the next goal. It is up to you to decide in what order you will master these skills. Keep in mind that the faster you and your class can master this type of accountable talk the better, but it is more important to do it right than to do it quickly. Finally,
one of the most important things in the development of rich classroom discourse is that it is a joint effort between you and your students. Make sure to impress upon your students that getting everyone to a place where they are comfortable with historical and scientific argumentation is a shared responsibility—it isn’t easy for anyone, including teachers, to always engage in this way.

Goal 1: Support the Development of Academic Language

No matter what your students’ level of literacy and vocabulary understanding, the more you use academic language in the classroom, including glossary terms and key course terms, the more they will understand and use these words. The use of academic language in context will reinforce their understanding of these words more than anything else they might do. Some suggestions for supporting the development of academic language:

1. Start by explaining what academic language is to your students. Ask them: How do scientists talk? How do historians talk? How does this compare to everyday language? Remind them that in this class you won’t use informal everyday language. You are going to aim for a higher academic standard for yourselves.

2. Keep a word wall in the classroom. Add key terms to this wall throughout the year. Point each other to the word wall when academic language could be used in place of everyday talk.

3. Play discussion games. At the beginning of each class, announce the game. Note that the goal of these games is not meant to be overly negative or critical, but rather to create a fun way for students to learn to recognize the code switching from informal daily discourse to formal academic debate. Some ideas for discussion games:
   a. Make a few people in the class the “academic language police.” Make it their job to call people out when they are not using academic language when they could. Rotate the “police” game through a few different classes so everyone has a chance to play this metacognitive role.
   b. Have an academic language “swear jar.” Each time a student (or you) are caught not using academic language, you or your students have to complete a task related to that word: use it in a sentence, write the definition on the board, write a quiz question, and so on.
   c. Point out examples of academic language is both in course readings and online videos. Have students annotate text to point out what language is academic and what is not. Or, while watching a video, have students note when a speaker is or isn’t using academic language.

4. Watch this video, College Talk, with your students:
   https://www.teachingchannel.org/videos/improving-student-vocabulary
   It’s about a convention that a second grade teacher uses, but the idea behind it applies to all grade levels.

Goal 2: Press for Justification and/or Reasoning (i.e, Claim testing)

The ideas behind pressing for justification and reasoning strongly connect to the claim testers model that we use in Big History. In using academic discourse in the classroom, we are forced to think about and use the concepts of authority, evidence, intuition, and logic. It holds us accountable to our assertions and moves beyond what something
is and toward why something is the way that it is. There are many ways to ask students “why” questions, but if you can use a specific set of questions and prompts with your students, it’s easier to establish norms around these conventions.

We suggest you present the following list of questions to your students (and post these permanently in the room), discuss how each question connects to one of the claim testers, and then practice using these questions until they are part of everyday discourse. And remember, these are not just questions for you to ask your students--these are questions for them to ask you and each other.

- Does your answer seem reasonable? Why or why not?
- Would you describe your method and explain why it works?
- How would you prove that? What can you say or show that would convince us your conclusions make sense?
- Do you agree with what you’ve just seen and heard? Why or why not?
- Do you have a reason why you don’t agree?
- Did anyone else draw the same conclusion but have a different way to explain it?
- Can you convince the rest of us your answer makes sense?

**Goal 3: Promote rich and engaging discourse**

It is our hope that we’ve created lessons and activities in Big History that support rich and engaging discourse. However, it is really up to you and your students to make sure this happens in the classroom. Remember, this is a shared responsibility. And while using academic language and pressing for justification encourage good discussion, there are a few additional steps you can take to ensure you and your students develop the ability to effortlessly engage in rich discourse.

One important step is creating a classroom climate in which students feel comfortable both sharing their thinking, and graciously giving and receiving constructive feedback. It is also important to create a climate where students have equal opportunity to share their thinking. Not all students are comfortable with whole class discussion, so it’s important that while you are working on this type of discourse, you provide a variety of venues in which students can participate. Some possibilities:

1. **Turn and talk**—Students turn and talk to the person next to them about the topic at hand. We encourage you to have students physically turn to one another in these types of discussion. Body orientation and eye contact matter for engaged discussion.

2. **Think, pair, share**—Similar to turn and talk, but allows students time to reflect on a topic or question before talking to a partner, and allows them to validate ideas with someone else before sharing with the entire class. This process often works well for students who like to have more time to formulate their thoughts before sharing with the class. Students can also share their partner’s ideas. Encourages effective listening and communication during the “pair” portion.

3. **Role assignment**—Students are assigned a position to represent. For example, each student might be assigned one of the pressing-for-justification questions and they are responsible for using those questions to ensure accountable talk is taking place. Or, each student takes on the role of one of the claim testers—authority, evidence, intuition, or logic.
Big History Writing Guide

Writing is a key component of the Big History course. Students need to write well to communicate their understanding and ideas in investigations, closing assignments, and projects. The act of writing and teaching writing can be difficult for students and teachers. This guide is meant as a starting place and we suggest you explore the additional resources to dig deeper into instructional models for teaching writing.

Writing in Big History should build on the literacy skills your students are gaining through close reading of texts and learning key vocabulary. We suggest the following three-part approach for guiding students’ writing and encourage you to build upon your own instructional strategies for teaching writing:

Part I: Prewriting

Prewriting is the act of preparing to write. In many ways, it is comparable to the “Capturing Gist” section of the Reading Guide. In this section, students will address the following:

- **Thesis** – What is the main idea or point you want to get across and why?
- **Brainstorming** – List all the ideas you want to include in the paper.
- **Sources** – Find the sources you might use to support your ideas, using claim testing to evaluate the quality of each source.
- **Scope** – Is the topic too big or too small?
- **Audience** – Is the topic appropriate for the audience?

Part II: Outlining and Drafting

This is where the paper starts to take shape for students. Outlining helps students organize their ideas, present their material in a logical form and flow, show the relationships among ideas, and show where ideas need to be supported with evidence. There are many possibilities for constructing outlines. What most have in common are the following:

- Thesis statement is at the top.
- Ideas are organized into related groups.
- Headings are created from these groupings. Subheadings are then created as needed.
- Supporting evidence is mapped to the different idea groups or headings.
- Conclusions are sketched out.

Once the outline is completed, students should start writing. They turn their basic ideas into sentences and get their ideas out as much as possible. This is not the point where students need to worry about polish – rather, they should be getting their thoughts onto paper.
Part III: Revising and Finalizing

This is the final stage of the writing process. Students should do at least two edits of their paper. The first edit should attend to the ideas in the paper, while the second attends to the mechanics of the paper. When editing for ideas, students should be able to answer yes to the following questions:

- Does the paper follow a logical flow?
- Are the ideas in the paper supported by evidence?
- Is the thesis supported throughout?
- Do ideas transition well from one to the next?
- Does the conclusion drive the point home and sufficiently wrap up the paper?

When editing for mechanics, students should attend to the following:

- Spelling
- Grammar
- Punctuation
- Formatting

Before submitting the paper, we recommend that students review their own papers using the Big History Writing Rubric. Peer review is another great way to accomplish a review before students submit the final product.

Additional Resources

1. The National Writing Project, a network devoted to improving the teaching of writing: nwp.org
2. Literacy Design Collaborative, an instructional model for Common Core literacy: ldc.org
3. Teaching Channel, a video showcase of teaching practices: teachingchannel.org
Assessment in Big History

Big History takes a multifaceted approach to assessment. We embed assessment throughout the course. Instead of using the more common terms of formative and summative, we like to think of all assessment activities, whether those come in the form of lessons, writing assignments, or more traditional tests, as informative assessments. All of the activities provide an opportunity for students and teachers to gain insight into their understanding, and all activities were developed with some degree of assessment in mind. Teachers should take every opportunity to review student work, looking for opportunities for improvement and enrichment.

It is important to note, however, that the importance of assessment goes far beyond the teacher: if a student does not have insight into assessment processes and outcomes, the results are only providing the teacher with information about how to change instruction. Assessment should also be used to help students monitor their own learning, strengths and weaknesses, and course expectations. Throughout the course, students should be encouraged to reflect on their own work and learn to provide constructive feedback on the work of peers. We encourage this type of reflection through student use of rubrics and peer review, in addition to the daily assessment that comes through using the Big History approaches to discussion.

Rubrics

We have a consistent set of rubrics that are used throughout the course to grade student writing, presentations, and the Little Big History activities. We provide a standardized set of rubrics for a few reasons. First, it’s confusing for students and teachers alike if we are constantly changing some of the core evaluating mechanisms in the course. Second, giving the students the opportunity to deeply understand rubrics helps them understand expectations, giving them a solid understanding of what they need to strive towards and meet to be successful in the course. Before students are ever graded using Big History rubrics, they first use those rubrics to grade other work. This way, they clearly understand all of the elements of an assignment. This not only leads to a higher quality of work, but also a greater understanding of expectations. It also helps students track their own improvement throughout the course. If the same writing rubric is used multiple times, they then have a tangible way to see how their writing is improving and the particular things that they need to focus on.

Closings

Each lesson in the Big History curriculum closes with an assessment activity. These come in many forms and may include quick activities such as a class vote or an exit card, a small group or whole class discussion, or a peer review. They may also be more formal assessments, often in the form of a final paper or investigation writing. For the most part, the assessment activities are intended to serve as formative assessment, so that both you and your students can regularly monitor their understanding of the concepts in the course. Depending upon how your students respond and perform in these various activities, you may choose to reinforce certain concepts as needed.

Writing Assessments

Throughout the course there will be formal writing assessments. There are formal research papers as well as investigation-related writing. Writing assignments, which are synonymous with this type of assessment, are one of the most important activities in Big History. Not only do students improve their general writing, a skill that is of paramount importance, but they also learn how to write historical and scientific papers. As part of these papers, students learn to ask important questions, hypothesize, conduct research, synthesize information, and justify claims that they make. In assessing student writing, you will not only be able to get a sense of whether or not your students are developing these vital skill related to writing, but you will also be able to gauge their understanding of the course material at a deeper level. In addition, there will be peer review of writing in the course. When students have the opportunity to compare their writing with other students’ writing, they will gain an even deeper understanding of their own strengths and weaknesses.
Lesson Quizzes

There are quizzes for each lesson in the course. These quizzes were created by seasoned Big History teachers using Big History learning outcomes and key vocabulary. One thing to keep in mind with these quizzes is that in many cases they are better used as a class exercise rather than a typical assessment test. It’s nearly impossible to prevent students from finding the answers to the quizzes—they can find a way to create a teacher account on the Big History website and get all of the answers they need. That said, the information in the quizzes include things that we really want students to know to be successful in the class. So, if you approach a quiz as a group activity, you will get a great sense of what your students have learned, what they are struggling with, and what kinds of practices they need to improve upon. They are great for homework, studying, small group, and whole class activities.
Driving Question Notebook Guide

The Big History curriculum takes on a very specific notion of journaling in the form of what we call the Driving Question Notebook – referred to as the DQ Notebook throughout the course. Instead of being an open forum for thoughts, feelings, and reflections, this particular journal is more pointed and focuses upon the driving questions from each unit. The aim is to help both students and teachers connect back to the core themes and big ideas of the course.

Students will write in their DQ Notebooks multiple times over each unit. We provide a worksheet for each unit with the driving question and other relevant directions. You should only print these once per unit and the students should reuse them when they encounter the DQ Notebook activity in any lesson of that unit. Each time students encounter the driving question, they will be asked to look at it from a new perspective, creating opportunities for them to revise and refine their initial understanding of the core concepts of the unit. The emphasis here is for students to focus on concepts rather than formalized writing.

An additional focus of the DQ Notebook is assessment. While you might not want to incorporate these assignments into your grading scheme, they should be incredibly useful in understanding how your students’ thinking is progressing, where they are gaining mastery, and where they might need additional instruction. It is also intended for students to use to examine how their thinking has progressed over the course of a unit. Not only does this success feel encouraging, it also mimics the scientific process—as we gather more evidence, our thinking changes. Our earlier ideas may not have been wrong (or perhaps, they were), but the newer ideas are more informed and developed.

The DQ Notebook is a place for students to write informally. It is more about thoughts and ideas and less about perfect grammar and spelling. The Big History course offers many opportunities for formal academic writing; the DQ Notebook isn’t meant to be one of them. With that in mind, we still want students to be thoughtful, back up claims with evidence, and so on, but we really want this to be a space where students can respond to questions, hypothesize, and ask questions of their own without concern for “good” writing.

Who sees the DQ Book?

Everyone. The DQ Notebook will be used in a variety of ways. Students may write and share their thinking with the class. They may peer review one another’s DQ Notebooks, or if you use an online forum instead of using the provided worksheets, everyone will have the chance to read the entries. This will help your students to remain thoughtful and accountable since their entries should always be considered part of a public forum.
Little Big History

The Little Big History (LBH) project is the culminating project of the Big History course. It allows students the opportunity to delve into an object, event, or idea in depth from a Big History perspective. This project has both collaborative and individual aspects, and results in either a presentation or service project.

Exactly what is a Little Big History? We define an LBH as meeting these three criteria:

- It captures change over time and includes at least three thresholds of increasing complexity.
- Unlike many histories, the chronological account must refer to at least one time period, event, or piece of evidence dating from before the evolution of humans.
- Since Big History uses many approaches to knowledge, such as geology, cosmology, biology, and chemistry, an LBH should include at least two disciplines.

Your students will work on teams to investigate one of the following:

- an object or a commodity (anything that is bought and sold)
- a process or technical innovation
- a social construct or institution
- an activity

Basically, just about anything that interests them and that they can research. At the end of this process, they’ll have completed a collaborative group paper, an individual paper, and a group presentation on the subject of their LBH.

Many of the activities leading up to the completion of the Little Big History project are completed as part of the course lessons. In the first half of the course, students spend time practicing the skills needed to complete an LBH, such as essay writing or use of the rubrics. In the second half of the course, you will encounter LBH activities in the following units and lessons: 6.1, 6.3, 7.0, 7.2, and 8.2. The LBH projects are big, and it’s important to be sure to pace the last few units appropriately so students have time to work on them. It’s also a great idea to make an event of the final presentations – this tends to invite a higher quality product from students and generates a lot of excitement.
Project Based Learning

Project-based learning (PBL) is a method of instruction that has students take part in an extended inquiry about a complex question, problem, or challenge. Veteran Big History teachers have reported having great fun, success, and learning when using these projects. Each of these activities is written to cover two weeks of instructional time.

The Big History Project includes three PBL activities:

- **Unit 5: Invent a Species** — In this project, groups are tasked with inventing a new species. They have to decide where their species came from, how it evolved, what skills and abilities it has, the trends that led to its survival, and so on. The development of their species has to be grounded in scientific thought and reason. The deliverables for the project are a model of the species and a Wikipedia entry about that species.

- **Unit 7: Feeding the World** — In this PBL, pairs of students are asked to determine how many people the Earth could support now and in 100 years, and what conditions would be necessary to support those numbers. The deliverables for this project are an infographic, a narrative of each condition, and a structured poster session presentation.

- **Unit 10: What Is the Next Threshold?** — In groups, students determine the next threshold. But rather than just imagining something, they have to use their knowledge of the prior threshold to rationally and scientifically predict what is next. They will create a threshold card and a podcast or newscast that explains the next threshold and the rationale behind why this prediction is logical and based in reason.

Each of these activities is written to cover two weeks of instructional time. In each, students work in groups to research their questions, compose a written response, and share their results with their class and the community. Each of these projects is written to follow the PBL methodology of the Buck Institute for Education. For more information on the PBL method, please see the Buck Institute for Education (BIE) website at http://www.bie.org/.
Openings Guide

The majority of lessons in Big History start with an opening activity. Opening activities are short exercises that serve to transition students into class, activate prior knowledge, reveal misconceptions, and assess student understanding and knowledge about the topic at hand. They are also meant to be fun and easy. We strongly encourage all teachers to use the opening activities—these are in many ways just as important as assessment activities since what you learn from your students in the opening may change the way you approach that day’s lesson.

Openings serve the following purpose:

1. **Transition**—All openings serve as a transition into class. They all start with a prompt, question, or other activity that students can engage with as they settle into class. Openings always start as independent work so that students can begin to engage as they are ready. It is important that you develop this transition activity norm early in the school year. After a few days of repeated transition activities, students will start to get the hang of automatically engaging with this when they come in the door.

2. **Activate prior knowledge**—All openings allow for students to think about or voice information they may already know related to the day’s topic. Everyone knows a little something about every topic, or, they may know what they don’t know. Either way, students are given the opportunity to reflect and be metacognitive about what they know. This prepares them to learn and also helps you understand the gaps in prerequisite knowledge that may exist in your classroom.

3. **Reveal misconceptions**—It is easy to develop misconceptions about scientific and historical concepts. As a teacher, if you have a sense of your students’ misconceptions, you can directly target them with instruction and instructional activities. However, it is not always easy to surface misconceptions. As with prior knowledge, opening activities give you the opportunity to learn about what your students have misunderstandings about so that you can address them as part of your lesson.

4. **Assess Student Understanding**—Throughout the Big History course, we have deliberate assessment activities. Openings are a less formal version of these activities, but they can still provide invaluable knowledge to both you and your students about what they know and what they still need to learn.

5. **Fun!**—Openings are meant to be fun, low-pressure activities. They invite student participation and aim to engage all students. Students will naturally like some types of openings more than other, but if the attitude toward openings is fun and light, they should serve as a great way to transition into each Big History lesson.
Vocab Activities Guide

The vocabulary in Big History is difficult, but vital to understanding the course content. To help reinforce the course vocabulary, in many lessons we suggest you engage students in at least one vocab activity. This guide includes a set of teacher-recommended activities, however you can treat these only as suggestions and use any vocab-building activities you like. It's not essential that every class or even every student participate in the same activities as they progress through each unit.

This is a menu of activity types that you can use to target the key vocabulary in the course, as well as other vocabulary that you feel your students need to learn to better understand course content.

Throughout the year you might just use a few of these activities repeatedly if they work well for you and your students. Or, you might try them all. It’s up to you to decide how you want to use them. Also, keep in mind that there are lots of online resources for learning vocabulary. These tend to be drill and practice exercises, which can work well for some learners. For example, some Big History teachers have used Quizlet.com to make flashcards for their students. In addition to these activities, we suggest you build a word wall in your classroom with the key terms for Big History. This will be a quick guide and easy-to-use resource when you’re in class, and it will also facilitate the use of academic language in discussions.

The menu of vocab activities is divided into three categories. The first are those that introduce students to vocabulary and aim to help them memorize words. The second category starts to push at student comprehension of vocabulary words, and the third category is supports the application of those words.

Menu of Activities

Memorization

- Memory/Concentration
- Mnemonics
- Crossword Puzzles

Comprehension

- Game: Real or Fake
- Quizzes
- Word Charades

Application

- Word Webs
- Group Writing
- Analogies

Memorization Activities

Memory/Concentration

This is a very simple--most likely familiar--activity, one that students usually find more fun than you might expect. It’s a simple way for students to practice memorizing vocabulary while playing a game. We suggest that you put students into small groups of three or four.
Process

6. Hand out to each group two 3x5 cards for each glossary term. (So if you have eight glossary terms and four groups of students, each group would receive 16 cards.)

7. Have the students write each glossary term on one side of one 3x5 card and its corresponding definition on one side of another 3x5 card.

8. Once they’ve finished writing all the words and definitions, have them mix up the cards and lay the cards face down on the table.

9. Students then each take turns picking up two cards to see if they can match a term with its correct definition. If the two cards don’t match, they show the other students in the group the cards, and then replace them from the same spots they picked them up.

10. Students continue through this process until all pairs are made.

11. The student with the most pairs wins.

Mnemonics

Mnemonic devices are commonly used to help learners remember words and their definitions. The act of creating mnemonics alone can reinforce a learner’s ability to remember and understand a concept. For the creation of mnemonics, we suggest you put your students into teams of two or three. Assign each group a word or words for which they need to create a mnemonic. After they’ve created their mnemonic, they’ll share it with the class. We recommend you compile the class mnemonics for everyone’s use.

There are many types of mnemonics. Although your students can develop their own types, you might want to share these with them before they get started:

- **Music**—A made-up song or jingle that’s the definition of a word. You can use a commonly known tune or something of your own.

- **Name**—The first letter of each word in a list of things to be memorized is used to make an acronym that’s the name of a person or thing. A common example of this is Roy G. Biv, often used to teach the colors of the spectrum (red, orange, yellow, green, blue, indigo, violet).

- **Expression or Word**—This is similar to a name mnemonic, but instead of a name, a phrase is made from the first letter of each word. So for example, for remembering the order of taxonomy in biology (kingdom, phylum, class, order, family, genus, species), you might say, King Phillip Cried Out for Good Soup.

- **Picture**—A sketch or picture that helps you recall a word. These are often silly and therefore easy to remember.

- **Poem**—A made-up poem (rhyming or not) that helps you remember a word.

Crossword Puzzles

Creating crossword puzzles for your students is very simple and there are a lot of online tools to help you. Go to any of the following websites and create a puzzle: Read, Write, Think , Just Crosswords, Variety Games, Armored Penguin, Ed Helper. Use the definitions of words as clues, and then have students come up with the correct words to solve the puzzle. As an easier alternative to crossword puzzles, you can create word finds using the same websites mentioned above.
Comprehension Activities

Game: Real or Fake?
This is a very quick and simple activity in which students come up with definitions for words and their classmates have to guess whether those definitions are real or fake. This will help test students' knowledge and understanding of terms.

Process

1. Hand out words to individual students, and secretly assign each student to either the “real” or “fake” condition (it’s important to do this so not all students make up fake definitions for words). Tell students that they can’t use the glossary definitions for words if they are in the “real” condition. Also, tell them that if they are in the “fake” condition, they should really be trying to trick the other members of the class, so they shouldn’t make their definitions too silly.

2. Once students have created their definitions, have them post the words and definitions around the room. Ensure there is room for students to write at the bottom of the paper.

3. Have students circulate the room and place a star on the posted paper if they think the definition is real, and an X on the paper if they think it’s fake.

4. Have students reveal whether the definition is real or fake. If it’s fake, have students tell you what the real definition should be.

5. The student that tricks the largest number of students in the class wins.

Quizzes
Have students take vocab quizzes at home or in class, and then review and correct the quizzes as a group. The Glossary Challenges in each unit are great for this. You can even have students write vocabulary quizzes of their own. They can do this for homework, and then take each other’s quizzes in class. This is an excellent generative activity that leads to deeper learning. Having students write quizzes goes beyond just comprehension to application.

Word Charades
This is based on the idea of the commercial game “Catch Phrase.” Teams can gain or lose points, and the group with the most points in the end wins.

Process

1. Break students into groups of six or so.

2. Give each group a matching set of 3x5 cards with glossary terms written on one side and have them place the cards face down on the table.

3. Have students take turns picking a card from the pile without letting the other students see what’s on the card. Once a student picks up a card, that student has 60 seconds to describe the given word to see if the other students in the group can guess what the word is. The student who is describing CANNOT use that word or any derivative of that word. So for example, if a student picks the term “Goldilocks Conditions,” they can talk about the things that are necessary for a new threshold of increasing complexity to emerge, but they cannot say things about “gold” or “locks” or “conditions.”

4. If a student does not use any key words and the group correctly guesses the word in 60 seconds, that group earns one point. If the student does use any key words, their turn is immediately over and the team loses a point. If the group does not guess the word in the 60 seconds, the card goes back in the pile and the team loses a point for that round.
Application Activities

Word Webs

Word webs are a great way for students to gain a deeper understanding of key vocabulary. They’re also a nice example of how the glossary terms in Big History are often connected to one another. There are so many different ways to create word webs and there are tons of online resources, but it’s also easy to do quick paper-and-pencil versions in class if you don’t have the electronic resources for building word webs online. Here are two different ways:

For learning individual terms:

1. Have students write the word in the middle of a piece of paper. Draw a circle around that word.
2. Draw a few lines leading away from the circle.
3. At the end of the lines, have students do all or any of the following:
   • Write synonyms for that word.
   • Write a definition of the word. (They must not use the original word in the definition.)
   • Write the major pieces of information that people should know about the word.
   • Write how the word relates to Big History.
4. If you want to continue this activity, have students circle any synonyms they wrote down, and then have them add more lines radiating away from that word. Repeat Step 3.
5. Keep going until students have exhausted what they can write about the word.

For understanding how Big History terms connect to one another:

1. Assign students three or four words and have them write them down, spreading out their placement on the paper (a triangle formation works well).
2. Have students circle each word, then connect lines between each word. You can also have them write each word’s definition inside the circle.
3. On the connecting lines, students should write how the two words related to one another.
4. In the space in the middle, have students write a sentence or two about how all three words connect.

Group Writing

Assign groups of students a few vocabulary words, and then have them write a cohesive and logical paragraph using them. Then, share out with the entire class. This could also be used as an individual homework assignment. This can be a surprisingly difficult activity, so consider providing the following directions to students to help them construct their paragraphs.

1. Find a common theme in your list of vocabulary word. [Note: you should also considering assigning groups of related words—this will usually happen seamlessly because the lessons and units have related vocabulary.]
2. Create a hierarchy of the words. Is there one word that really describes the theme and the other words support that?
3. Think about what part of speech the individual words belong to: For example, are they nouns? Verbs? Adjectives? [Note: This will help your students fit the words into sentences.]
4. Begin the paragraph with a very clear topic sentence.
5. Use synonyms to reinforce the meaning of the words in the paragraph.
6. The paragraph should be at least four sentences.
7. Do not use the words and their definitions in your sentences—this isn’t a list of words and definitions. Use the words to describe concepts, build statements, and so on.

Analogies
Creating analogies for words is a great activity not only for comprehension, but also for memorization. Analogies help students more deeply understand the meaning of words and concepts. For this activity, we suggest having students work in pairs or small groups. Give each group of students a few vocabulary words to work with, and ask them to create metaphors or analogies for each word. If you need to review what metaphors and analogies are with students, here are some tips:

1. Remind them that metaphors and analogies are comparisons between unlike things that might have some particular elements in common. Ask for or give them some examples of common metaphors and analogies such as:
   - The apple does not fall far from the tree
   - The human eye is like a camera
   - It costs an arm and a leg

2. Create one or two analogies as a whole class exercise. To do this, select a concept that students are familiar with that has some similarities with a new concept. In Big History, you might choose to create an analogy for a claim tester. To do this, you might select the familiar or related idea of evidence. As a class, brainstorm characteristics or qualities that are shared by the two concepts, and those that are not. The categories of comparison should help you come up with an analogy or metaphor for the original word.

3. You may also want to use a graphic organizer to help students draw analogies. An online search for “Analogy Graphic Organize” will yield a large variety of options.
Interpreting Infographics Guide

Infographics are visual representations of information that are intended to simplify complex concepts by presenting data in a way that tells a story or makes an argument. They are used frequently in Big History to display and summarize information. Interpreting infographics is a skill that requires students to understand the relationships between the data displayed, the technical vocabulary, and what the author is trying to say through the visual representation. We recommend you provide your students with a set of questions that will help them pick out the key features of an infographic. In addition, while some students might easily understand the information, there are other elements of infographics, such as sources, that are easily forgotten.

For example, this infographic from Unit 3 helps students to understand the life cycle of stars, the different kinds of stars that exist, and what the stars produce.

Guide students to ask themselves the following questions when they look at an infographic. These questions are also in the Infographic Worksheet for students to refer to throughout the course.

1. What is the first thing that catches your eye? What might this tell you about what you are looking at?
2. What is the title? Does that reinforce your thoughts regarding what you thought this was about, or change them?
3. What is the story that the infographic is trying to tell? Is it a pure visualization, does it show change over time, is it comparing and contrasting?
4. What are the patterns and connections visible in the infographic?
5. What is the quantitative information presented in the graphic? What does it tell you?
6. What is the data source? Use your claim testers to determine if this data source is valid and robust.
7. Why do you think the authors chose to present the information in this way? Who is their audience?
8. Summarize the infographic in a few sentences. What is the gist of the infographic and what are the most important take away points?
Homework Guide

Homework is an important aspect of any type of learning. The development of mastery and expertise can only happen through repeated deliberate practice, and the way that people use their time to learn has a large impact on learning. Learning scientists have shown that “deliberate practice” around a topic (in our case, the big ideas in Big History), including the monitoring of one’s own learning, is what leads to successful learning. Therefore, the process of doing homework that you carefully assign not only helps students recall and revisit what they have learned, but it is also a “deliberate” way of doing this, requiring a process of self-monitoring out of the classroom that will lead maximal learning.

We chose not to include homework suggestions in the lessons—we know many schools have conventions around homework and we don’t want to disrupt that process. We expect that homework will often emerge organically from course content, often for work that you did not have time to finish with your students in class. However, sometimes it is helpful to be more deliberate around homework, and we’ve received some great tips and tricks from Big History teachers about homework and the kinds of things people send home.

Video

We love the idea of using videos as homework. Videos are vital to the course, but can take up a lot of class time. While it’s hard to ensure access for all students, if you assign video homework with enough notice, all students can find access to the videos in a school library, a public library, or on a smart phone, for example. Even if you are in a technology lean school, think about ways you can help your student find access. Some things to keep in mind when assigning video homework:

- It’s best to assign an activity along with the video. Passive video watching, like passive reading, often leads to little or no comprehension of the video. The discussion questions we provide can be great prompts for students. Or, you might assign a larger question for students to think and write about in relation to the video.
- Assigning a 10-minute video along with an activity will likely take students a lot longer than 10 minutes. Please keep that in mind when thinking about assigning videos for homework.

Readings

As with videos, it’s important to ensure that reading is an active process. We suggest sending the Three Close Reads Worksheet home with students. One great thing about assigning reading for homework is that even if students don’t have technology access at home, reading assignments can always be printed at school for students to take home.

- As described in our reading guide, we provide three or four different versions of the same article for students at different reading levels. This allows all students to access the same content, but it is differentiated to fit their specific academic needs.
- As with the video homework assignments, carefully gauge how long it will take to read an article. If the reading assignment is particularly long, consider having students do the first and second close reads at home, and then have them do the third read in class. There are many ways to structure the “active” part of the reading while being mindful of time.

Little Big History and Project-Based Learning (PBL) Units

It would be difficult for students to complete their Little Big History projects or their PBL unit assignments without assigning homework. Both activities require research outside of class and also group work. Before you send students off to work on these outside of class, consider the following:
• If they are doing group work, can they find a way to meet up without too much trouble? If not, you might need to save some group work for class, or, work carefully with students around dividing up work. Or, you might assign groups based on geography.

• Do they know how to do outside research? This is something that will likely need to be modeled in class.

• Do they have access to the materials that they need to complete projects?
Lesson 1.2
Origin Stories

Unit Driving Question:
Why do we look at things from far away and close up?

Lesson 1.2 Overview
Origin stories are the emphasis of this lesson. Big History focuses on the modern, scientific origin story of how the world got to be the way it is. Even though this particular origin story is the start of Big History, it’s important to recognize that many different types of origin stories exist. Some are thousands of years old and some are newer. They come from varying cultures and religions, but one theme runs through all of them: It seems that all humans are interested in understanding their origin to some degree. In this lesson, you’ll first use Universe Verse to introduce your students to the modern, scientific origin story of the Big Bang. Then, your class will investigate a variety of origin stories in groups. You’ll also read about different origin stories and take part in two of our recurring Big History activities—the DQ Notebook and vocabulary. The lesson will end with students thinking more deeply about their personal origin stories.

Lesson 1.2 Learning Outcomes
1. Define the key course theme of origin stories.
2. Explain the features of origin stories that Big History shares with traditional origin stories.

Lesson 1.2 Vocabulary

Big Bang— A theory, first articulated in the 1930s, that proposes the entire Universe sprang from an extremely dense singularity that generated space and time as it expanded outward.

Big History— A unified account of the entire history of the Universe that uses evidence and ideas from many disciplines to create a broad context for understanding humanity; a modern scientific origin story.
**Lesson 1.2 Outline**

1. Opening: Universe Verse (excerpt: 12 pages)
2. Watch: Big Questions – H2 (1:54)
3. Activity: Origin Stories Introduction (6 pages)
4. Activity: Origin Stories from a Variety of Cultures (4 – 5 pages each)
5. Read: “Cosmology and Faith” (6 pages)
6. Closing: DQ Notebook

---

**1. Opening: Universe Verse**

**Preparation**

Download the Opening Activities Guide

Download Universe Verse (If printing, select only pages 9 – 20 of the downloaded PDF.)

**Purpose**

Universe Verse is an easy-to-read book. It’s a light way to think about the modern, scientific origin story. Also, it’s a great preview of the Big Bang. It’s easygoing and provides a gentle way into the heavier science that’s coming.

**Process**

As students come into the room, have them read the first 12 pages of Universe Verse.
Have students respond in writing to this question: The first 12 pages of Universe Verse describe one view of how the Universe began. Can you think of other views and stories about how the Universe began?

Once everyone has finished reading and most students have had a chance to respond in writing, have some students share out alternative ideas to the Big Bang. You might find that students have already previewed some of the stories that they’ll be learning more about in the next activity.

2. Watch: Big Questions – H2 (1:54)

Preparation
Download the Discussion Quick Guide

Purpose
This video is a very quick introduction to the idea that in Big History one of the most important things we do is ask big questions. The video discusses some of those kinds of questions, as well as how we might begin to answer them.

Process

Preview
This Big History video asks the big questions about the beginning of life and even the meaning of life itself.

Key Ideas – Factual
This video is particularly short so there is likely no need to stop and check in with students during the viewing.

Conceptual Thinking
Using the Discussion Quick Guide, discuss these questions: What are some of the big questions that you have? What do you think it means to be human? How does modern science help you think about these questions?

Summary
Big History allows us to ask really big questions about the Universe and our place in it. Historical and scientific discoveries help us answer these questions.
3. Activity: Origin Stories Introduction

Preparation

Download the Big History Reading Guide
Download the Three Close Reads Worksheet
Download the Origin Stories Comparison worksheet
Download the “Origin Stories Introduction” (5 pages)
Download the “Modern Scientific” Origin Story (5 pages)

Purpose

This activity has two purposes: First, you’ll start to become familiar with a very deliberate reading process that you’ll use throughout the Big History course. This will not only help your students understand the readings for this course, but the skills you learn will also transfer to other classes. Second, students become familiar with the idea of an origin story. Cultures around the world have their own origin stories, ways in which they believe and describe how the Universe came to be. It’s important that students understand that all origin stories should be respected, as they often relate to people’s cultures and beliefs. Big History is another one of these origin stories. Specifically, it is what many consider a modern, scientific origin story.

Process (Part I)

Before you dive into the articles, review the Big History Reading Guide with your students. Be sure you discuss the guide, rather than just walk students through it. Once you feel that students have grasped the general idea of how we approach readings in the Big History course, have them look at the Three Close Reads Worksheet and review the directions. Talk about the difference between approaching readings for capturing gist, reading for factual information, and analyzing for conceptual thinking. You might consider modeling this reading process with your students using the “Origin Stories Introduction” and then have them practice on their own using the other article in this activity.

Preview—Capturing Gist

Have students fill out the Capturing Gist section of the Three Close Reads Worksheet as they complete their first close read of the “Origin Stories Introduction.”
Origin stories have been important to humans for thousands of years. There are many origin stories, and there is great variety among them. Big History tells an origin story, one that is based on modern, scientific understanding of humans and the Universe.

**Key Ideas—Factual**

By the end of the second close read of “Origin Stories Introduction,” students should be able to answer the following questions:

1. How does Stokes Brown define origin stories?
   Sample answer: Origin stories are stories about how the Universe began and how humans came into being.

2. How does Stokes Brown define oral tradition and why is it important to the study of origin stories?
   Sample answer: Stories that go back before writing was invented were memorized and told aloud. This tradition of remembering and sharing stories is called the oral tradition.

**Conceptual Thinking**

Ask students to think about other origin stories that they know about (maybe from their own culture). How do these compare to the modern scientific origin story that is Big History?

**Process (Part II)**

Pass out or have students download the Origin Stories Comparison Worksheet. Ask students to fill in the section of the chart for the “Modern Scientific” origin story as they read the article. It is also a good idea to have them practice the Big History reading process using the Three Close Reads Worksheet as they read this article.

**Summary**

Review student answers for the “Modern Scientific” origin story section of the worksheet chart. It’s important to note that some of the questions on the chart can’t be answered. Students will need to write “unknown” or “can’t be answered at this time” for those questions.

**4. Activity: Origin Stories from a Variety of Cultures (4 – 5 pages each)**

**Preparation**

Download [the Three Close Reads Worksheet](#)

Download [the “Chinese” Origin Story](#)

Download [the “Judeo-Christian” Origin Story](#)
Download the “Iroquois” Origin Story
Download the “Mayan” Origin Story
Download the “Greek” Origin Story

Purpose
These origin stories are important for a number of reasons: They’re entertaining, instructive, and also useful, because they help us better understand the kinds of questions that origin stories answer and the motivations of humans in asking these types of questions.

Process
Students have read the “Modern Scientific” origin story and filled in the information on their Origin Story Comparison Worksheet for this article. There are five other origin stories in this unit: Chinese, Greek, Iroquois, Judeo-Christian, and Mayan. Each group of students will read one article and report back to the class. You’ll need to decide if you want to use all five stories, which will require five groups, or a smaller selection of the stories, which will require fewer groups.

Assign students to a group and assign each group an origin story. Students should read their story using the Three Close Reads Worksheet and then discuss as a group how they would fill in the column for their origin story on the Origin Story Comparison Worksheet. They should fill in the appropriate column as they discuss the story.

Once all the groups have finished, have students circulate around the room and fill in the other sections of the worksheet (or have each group put its information on the board for other students to copy).

Ask students to look at the information on the worksheet. Are there any significant similarities or differences among the stories that leap out at them? Does the information they’ve written on their worksheets provide any insight into the reasons why people create origin stories?

5. Read: “Cosmology and Faith” (6 pages)

Preparation
Download the Three Close Reads Worksheet
Download “Cosmology and Faith”
Purpose
The content in this article offers students a chance to think about the philosophical and moral implications behind having various origin stories in our lives, and how we might think about the conflicts that arise from having different stories. It also helps them consider if and how we might reconcile those differences.

Process
Preview—Capturing Gist
Have students fill out the Capturing Gist section of the worksheet as they complete their first close read.

Humans have always wondered about the Universe and asked big questions about it. They have always sought to understand how the Universe came to be and their place in it. For much of human history, answers were provided by mythology and religion. In more recent times, with the development of the various scientific disciplines, science has offered answers to these questions as well. However, these answers are not always the same. How should humans resolve the differences in the answers that religion and science provide to these important questions?

Key Ideas—Factual
By the end of the second close read, students should be able to answer the following questions:

1. According to Haught, why have humans always exhibited a desire to understand the origin of things?
   Sample answer: He argues that having origin stories reduces human anxiety in the face of the unknown.

2. Haught also argues that humans have a need for narrative coherence. What does he mean by this?
   Sample answer: Narrative coherence is the idea that humans desire to make connections between things that seem to be separate. For example, the history of human beings on Earth (the focus of history courses) and the history of the Earth (the focus of geology courses) are not separate but can be connected by a story.

3. What distinction does Haught make between the “visible world” and the “really real world?”
   Sample answer: The visible world is the world that is open to scientific investigation. The “really real world” is infinitely larger than the visible world and includes spirits, gods, and long-departed ancestors.
4. According to Haught, how does religion try to overcome this division between the visible and really real worlds?

Sample answer: "Religions strive to break through the physical limits that cut off human existence from the mysterious worlds to which their symbols and stories point."

5. According to Haught, what are three ways that a person might think about how science and faith relate to each other?

Sample answer:

- Conflict: the sciences and religion will always be in conflict.
- Contrast: science and faith seem to be in conflict, but they each answer different questions, so they’re not.
- Convergence: science and faith mutually interact and each can contribute to the other.

**Conceptual Thinking**

Have students think about this question at the end of their third close read: Think about the conflict, contrast, and convergence ideas that were presented in the Haught article—what do you think makes the most sense and how can you logically argue for your side?

**Summary**

In Big History, questions of science and faith will recur at many points when discussing the origins of the Universe, the origins of the Earth, and the origins of life. Faith will play a big role in the story of collective learning, so the issue will be of particular importance in the story of agrarian civilizations.

6. **Closing: DQ Notebook**

**Preparation**

[Download](#) the Discussion Quick Guide

[Download](#) the Big History Assessment Guide

**Purpose**

All lessons and units will end with some sort of assessment activity. These will usually be informative assessments that give you and your students a sense of their current understanding of the course. In some instances, there will also be more formal, traditional summative assessments. These assessment activities should help you make instructional decisions about what you’ll do next with your students. The purpose of this particular assessment activity is to
have students revisit the driving question for the unit. Now that students have learned more about scale, they should revise their thinking and have a more in-depth response to this question. Make sure your students use the new information that they have gained to support their answers.

**Process**

Unit 1 Driving Question: Why do we look at things from far away and close up?

Have students use the DQ Notebook Worksheet – Unit 1 that they started in Lesson 1.0 to list some ideas about why we look at things from far away and close up.

Since this is the second and last time they will encounter the DQ Notebook in this unit, they should also write about how their thinking has changed from the first time they responded to the driving question.

Make sure to collect and review your students’ answers so you can get a sense of their understanding of the importance of scale and how it relates to Big History.
Lesson 1.2

Origin Stories

Unit Driving Question:
Why do we look at things from far away and close up?

Lesson 1.2 Overview

Origin stories are the emphasis of this lesson. Big History focuses on the modern, scientific origin story of how the world got to be the way it is. Even though this particular origin story is the start of Big History, it’s important to recognize that many different types of origin stories exist. Some are thousands of years old and some are newer. They come from varying cultures and religions, but one theme runs through all of them: It seems that all humans are interested in understanding their origin to some degree. In this lesson, you’ll read Universe Verse, which introduces you to the modern, scientific origin story of the Big Bang. Then, you’ll investigate a variety of origin stories in groups. You’ll also read about different origin stories and take part in two of our recurring Big History activities—the DQ Notebook and vocabulary. By the end of the lesson, you’ll be thinking deeply about your personal origin story.

Lesson 1.2 Learning Outcomes

1. Define the key course theme of origin stories.

2. Explain the features of origin stories that Big History shares with traditional origin stories.

Lesson 1.2 Vocabulary

**Big Bang**—A theory, first articulated in the 1930s, that proposes the entire Universe sprang from an extremely dense singularity that generated space and time as it expanded outward.

**Big History**—A unified account of the entire history of the Universe that uses evidence and ideas from many disciplines to create a broad context for understanding humanity; a modern scientific origin story.
**Lesson 1.2 Outline**

1. **Opening:** Universe Verse (excerpt: 12 pages)
2. **Watch:** Big Questions – H2 (1:54)
3. **Activity:** Origin Stories Introduction (6 pages)
4. **Activity:** Origin Stories from a Variety of Cultures (4 – 5 pages each)
5. **Read:** “Cosmology and Faith” (6 pages)
6. **Closing:** DQ Notebook

**1. Opening: Universe Verse**

**Preparation**

Download Universe Verse (If printing, select only pages 9 – 20 of the downloaded PDF.)

**Purpose**

Universe Verse is an easy-to-read book. It’s a light way to think about the modern, scientific origin story. Also, it’s a great preview of the Big Bang.

**Process**

Read the first 12 pages of Universe Verse.

Can you think of other views and stories about how the Universe began? Answer in writing, and be prepared to share your response with the class.
These stories about the way the Universe began and how humans came into being are called origin stories.

2. Watch: Big Questions – H2 (1:54)

Purpose
This Big History video will give you a good idea of what we mean when we say Big History asks and attempts to answer the “big questions” about the beginning of life and even the meaning of life itself.

Process
Conceptual Thinking
What are some of the big questions that you have? What do you think it means to be human? How does modern science help you think about these questions? Use the Discussion Quick Guide to help you prepare to talk about your answers as a class.

Summary
Big History allows us to ask really big questions about the Universe and our place in it. Historical and scientific discoveries help us answer these questions.

3. Activity: Origin Stories Introduction

Preparation
Download the Big History Reading Guide
Download the Three Close Reads Worksheet
Download the Origin Stories Comparison worksheet
Download the “Origin Stories Introduction” (5 pages)
Download the “Modern Scientific” Origin Story (5 pages)

Purpose
This activity has two purposes: First, you’ll start to become familiar with a very deliberate reading process that you’ll use throughout the Big History course. This will not only help you understand the readings for this course, but the skills you learn will also transfer to other classes. Second, you will become familiar with the idea of an origin story. Cultures around the
world have their own origin stories, ways in which they believe and describe how the Universe came to be. It’s important that you understand that all origin stories should be respected, as they often relate to people’s cultures and beliefs. Big History is another one of these origin stories. Specifically, it is what many consider a modern, scientific origin story.

**Process (Part I)**

Before you dive into the articles, review the Big History Reading Guide with your class. Then, look at the Three Close Reads Worksheet and review the directions. Think about the difference between approaching readings for capturing gist, reading for factual information, and analyzing for conceptual thinking.

**Preview—Capturing Gist**

Fill out the Capturing Gist section of the Three Close Reads Worksheet as you do your first close read.

**Key Ideas—Factual**

By the end of the second close read of “Origin Stories Introduction,” you should be able to answer the following questions:

1. How does Stokes Brown define origin stories?
2. How does Stokes Brown define oral tradition, and why is it important to the study of origin stories?

**Conceptual Thinking**

Think about other origin stories that you know about (maybe from your own culture). How do these compare to the modern, scientific origin story that is Big History?

**Process (Part II)**

Fill in the sections on the Origin Stories Comparison Worksheet using the information from the "Modern Scientific" article. You should also practice the Big History reading process using the Three Close Reads Worksheet as you read the article.

**Summary**

Be prepared to share your “Modern Scientific” origin story chart answers with the class. Note that some of the questions on the chart can’t be answered. You can write “unknown” or “can’t be answered at this time” for those questions.
4. Activity: Origin Stories from a Variety of Cultures (4 – 5 pages each)

**Preparation**

Download the Three Close Reads Worksheet
Download the “Chinese” Origin Story
Download the “Judeo-Christian” Origin Story
Download the “Iroquois” Origin Story
Download the “Mayan” Origin Story
Download the “Greek” Origin Story

**Purpose**

These origin stories are important for a number of reasons: They’re entertaining, instructive, and also useful, because they help us better understand the kinds of questions that origin stories answer and the motivations of humans in asking these types of questions.

Your teacher will assign you to a group and assign your group an origin story to read.

You should read your group’s story and then discuss the story with your group members to come to a consensus about what information to put on the Origin Story Comparison Worksheet. Once all the groups have finished, you’ll walk around the room and fill in the other sections of the worksheet based on the findings of the other groups.

Look carefully at the information you’ve recorded on your worksheet. Are there any significant similarities or differences among the stories that leap out at you? Does the information you’ve written on your worksheet provide any insight into the reasons why people create origin stories?

Be prepared to share your thoughts with the class.

5. Read: “Cosmology and Faith” (6 pages)

**Preparation**

Download the Three Close Reads Worksheet
Download “Cosmology and Faith”
Purpose
This reading offers a chance for you to think about the philosophical and moral implications behind having various origin stories in our lives, and how we might think about the conflicts that arise from having different stories. It also helps you consider if and how you might reconcile those differences.

Process
Before you dive into the article, your teacher will introduce you to the Big History approach to reading. You’ll discuss this approach as a class. Then, you’ll use the Three Close Reads Worksheet to remind you of the process as you read.

Preview—Capturing Gist
Fill out the Capturing Gist section of the worksheet as you do your first close read.

Key Ideas—Factual
By the end of the second close read, you should be able to answer the following questions:
1. According to Haught, why have humans always exhibited a desire to understand the origin of things?
2. Haught also argues that humans have a need for narrative coherence. What does he mean by this?
3. What distinction does Haught make between the “visible world” and the “really real world?”
4. According to Haught, how does religion try to overcome this division between the visible and really real worlds?
5. According to Haught, what are three ways that a person might think about how science and faith relate to each other?

Conceptual Thinking
At the end of the third close read, respond to this question: Think about the conflict, contrast, and convergence ideas that were presented in the Haught article—what do you think makes the most sense and how can you logically argue for your side?

Summary
In Big History, questions of science and faith will recur at many points when discussing the origins of the Universe, the origins of the Earth, and the origins of life. Faith will play a big role in the story of collective learning, so the issue will be of particular importance in the story of agrarian civilizations.
6. Closing: DQ Notebook

Purpose
All of the lessons and units in this course will end in some sort of assessment activity. These activities are meant to help you figure out how you’re doing, what you’re learning, and what more you can do to keep learning. Don’t get worked up about these activities—they’ll usually be quick and fun and feel like just another part of learning the material. Some of the assessments might have a bigger impact on your grade than others, but your teacher will let you know when that’s the case. In general, just remember that these activities will help you gain a sense of where you are in the course and what you can do to keep improving.

This activity revisits the driving question that you responded to in the last lesson. Since you’ve already learned a lot more since you were first asked that question, you should be able to answer the question using a lot more information.

Process
Think about this question (again!): Why do we look at things from far away and close up?

On your DQ Notebook Worksheet – Unit 1 that you started in Lesson 1.0, write a response to this question. Since this is the second and last time you’ll get to write in your DQ Notebook this unit, also write about how your thinking has changed since you last responded to this question.